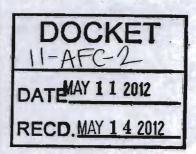


CH2M HILL 2485 Natomas Park Drive Suite 600 Sacramento, CA 95833 Tel 916.286.0224 Fax 916.614.3424

May 11, 2012

427930.DI.DR

Mike Monasmith
Senior Project Manager
Systems Assessment & Facility Siting Division
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814



Subject: Supplemental Data Response, Set 4

Hidden Hills Solar Electric Generating System (11-AFC-2)

Dear Mr. Monasmith:

On behalf of Hidden Hills Solar I, LLC; and Hidden Hills Solar II, LLC, please find attached a copy of Supplemental Data Response, Set 4.

Hard copies will be sent out to the POS list. Please call me if you have any questions.

Sincerely, CH2M HILL

John L. Carrier, J.D. Program Manager

Encl.

c: POS List

Project file

the Carrier

Supplemental Data Response Set 4

Hidden Hills

Solar Electric Generating System
(11-AFC-2)



Application for Certification Hidden Hills Solar I, LLC; and Hidden Hills Solar II, LLC

May 2012

With Technical Assistance from



Hidden Hills Solar Electric Generating System (HHSEGS)

(11-AFC-2)

Supplemental Data Response, Set 4 (Responses to Traffic and Transportation, Visual Resources, and Soil & Water Resources)

Submitted to the

California Energy Commission

Submitted by

Hidden Hills Solar I, LLC; and Hidden Hills Solar II, LLC

May 11, 2012

With Assistance from

CH2MHILL 2485 Natomas Park Drive

Suite 600 Sacramento, CA 95833

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Section		Page
Introduction	ı	1
Traffic and T	ransportation (TT-6)	2
Visual Resou	ırces (VR-6)	3
Soil and Wat	ter Resources (WR-3)	4
Figure		
DR32-2R2	KOP-7 View from Garnet Road	
Attachment		
WR3-1	Stormwater Retention Area Mans and Calculations	

Introduction

Attached are supplemental responses (Set 4) by Hidden Hills Solar I, LLC, and Hidden Hills Solar II, LLC (collectively, "Applicant") to the California Energy Commission ("CEC") Staff's data requests for the Hidden Hills Solar Electric Generating System project ("HHSEGS" or "project") (11-AFC-2). These materials are in response to questions raised at a workshop held on April 27, 2012, information requested directly by staff (phone or email requests), or additional information that has become known since the AFC was filed.

The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are numbered for tracking and reference convenience. New graphics or tables are numbered in reference to the Supplemental Data Request number. For example, if a table were used in response to Data Request BR-2, it would be numbered Table BR2-1. The first figure used in response to Data Request PD-2 would be Figure PD2-1, and so on.

Additional figures and attachments submitted in response to a data request are found at the end of the Data Responses.

MAY 11, 2012 1 INTRODUCTION

Traffic and Transportation (TT-6)

BACKGROUND

Data Request TT-6 was received by phone from Candace Hill of the California Energy Commission on April 18, 2012.

DATA REQUEST

TT-6. Will any truck traffic to the HHSEGS site travel I-15 coming from the south?

Response: Yes, there will be truck traffic coming from Southern California on I-15 to the HHSEGS site. The trucks will travel I-15 to Las Vegas then head west on State Route 160 to Tecopa Road.

MAY 11, 2012 2 TRAFFIC AND TRANSPORTATION

Visual Resources (VR-6)

BACKGROUND

Data Request VR-6 was received by phone conversation with Melissa Mourkas of the California Energy Commission on April 11, 2012.

DATA REQUEST

VR-6. Staff is wondering why KOP 7 only shows one of the two Power Towers. Looking at KOP 7, it seems like if the view had been shifted to the left slightly, two towers would have been shown, as in the original KOP 7.

Response: A copy of the revised KOP 7 simulation (Figure DR32-2R2) is attached. A new base photo, which was obtained from Staff, was used so that both solar towers are visible in this revised simulation.

Soil and Water Resources (WR-3)

BACKGROUND

Data Request WR-3 was received at a workshop held at the California Energy Commission on April 27, 2012.

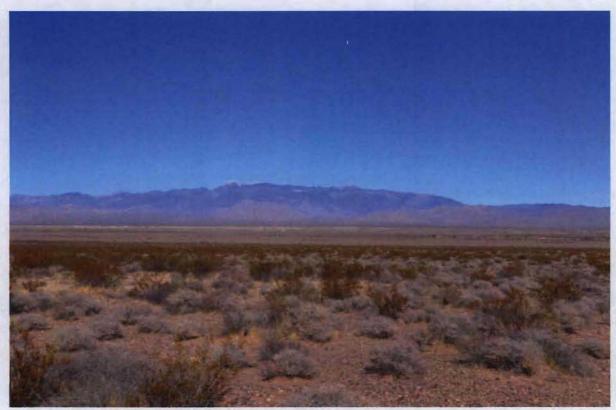
DATA REQUEST

WR-3. Please provide copies of maps of the stormwater retention area shown to workshop participants on April 27, 2012.

Response: The following resource data, maps and calculations pertaining to the stormwater retention area on the western side of the HHSEGS site (near the Temporary Construction and Laydown Area) are provided in Attachment WR3-1:

- Evaporation Map
- Infiltration Calculations
- NRCS Physical Soil Properties
- Retention Summary
- Retention Area Initial Ponding
- Retention Area 24-hr Ponding

MAY 11, 2012 4 SOIL AND WATER RESOURCES



A. KOP-7: Existing view toward the project site from Garnet Road, 1.75 miles south of Tecopa Road.



B. KOP-7: Simulated view toward the project site from Gamet Road, 1.75 miles south of Tecopa Road.

FIGURE DR 32-2 R2 KOP-7. View from Garnet Road Hidden Hills Solar Electric Generating System

Attachment WR3-1 Stormwater Retention Area Maps and Calculations

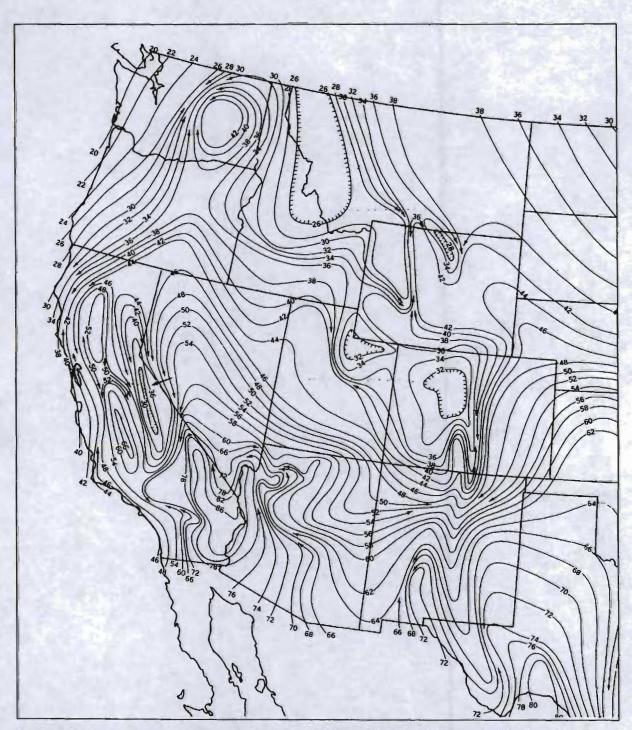


Figure 1.5—Average annual lake evaporation (in inches) in the western United States for the period 1946–1955 (from Kohler et al., 1959, Plate 2).

Soil s5740 Soil Components

Soil Type: Beshern

Jon Type.	Desileilii			
Soil Depth (in)	Soil Thickness (in)	Average Hydraulic Conductivity (Micro m/hr)	Average Hydraulic Conductivity (in/hr)	Weighted Average
0-2	2	2.82	0.40	0.01
2-60	58	0.92	0.13	0.13
Total Thickness =	60			

Total Hydraulic Conductivity (in/hr) =

0.14

Soil Type: Nopah

Joli Type.	Nobali			
Soil Depth (in)	Soil Thickness (in)	Average Hydraulic Conductivity (Micro m/hr)	Average Hydraulic Conductivity (in/hr)	Weighted Average
0-6	6	2.82	0.40	0.04
6-60	54	0.92	0.13	0.12
Total Thickness =	60			

Total Hydraulic Conductivity (in/hr) =

0.16

Soil Type: Glencarb

Jon Type.	Cicircaid			
Soil Depth (in)	Soil Thickness (in)	Average Hydraulic Conductivity (Micro m/hr)	Average Hydraulic Conductivity (in/hr)	Weighted Average
0-8	8	9.17	1.30	0.17
8-60	52	2.82	0.40	0.35
Total Thickness =	60			

Total Hydraulic Conductivity (in/hr) =

0.52

Soil Type: Haymont

Soil Depth (in)	Soil Thickness (in)	Average Hydraulic Conductivity (Micro m/hr)	Average Hydraulic Conductivity (in/hr)	Weighted Average
0-3	3	9.17	1.30	0.06
3-40	37	9.17	1.30	0.80
40-60	20	9.17	1.30	0.43
Total Thickness =	60	THE RESERVE	WATER OF THE	L

Total Hydraulic Conductivity (in/hr) =

1.30

Soil Type: Rumpah

Juli Type.	Kumpan	111	22	
Soil Depth (in)	Soil Thickness (in)	Average Hydraulic Conductivity (Micro m/hr)	Average Hydraulic Conductivity (in/hr)	Weighted Average
0-3	3	0.92	0.13	0.01
3-60	57	0.21	0.03	0.03
Total Thickness =	60			Market Street

Total Hydraulic Conductivity (in/hr) =

0.03

Soil Type: Tencee

Soil Depth (in)	Soil Thickness (in)	Average Hydraulic Conductivity (Micro m/hr)	Average Hydraulic Conductivity (in/hr)	Weighted Average
0-2	2	9.17	1.30	0.24
2-11	9	9.17	1.30	1.06
Total Thickness =	11	I E ME		7-11-2

Total Hydraulic Conductivity (in/hr) =

1.30

Soil Type: Bluepoint

Joil Type.	Bluepolit	110			
Soil Depth (in)	Soil Thickness (in)	Average Hydraulic Conductivity (Micro m/hr)	Average Hydraulic Conductivity (in/hr)	Weighted Average	
0-41	41	91.74	13.00	8.89	
41-60	19	28.23	4.00	1.27	1
Total Thickness =	60		The same of the sa	Parmi	

Total Hydraulic Conductivity (in/hr) =

10.15

Soil Type:	Pahrump			
	Soil Thickness	Average Hydraulic Conductivity	Average Hydraulic Conductivity	We

Soil Depth (in)	Soil Thickness (in)	Hydraulic Conductivity (Micro m/hr)	Hydraulic Conductivity (in/hr)	Weighted Average
0-2	2	28.23	4.00	0.13
2-16	14	9.17	1.30	0.30
16-42	26	2.82	0.40	0.17
42-60	18	9.17	1.30	0.39
Total Thickness =	60	7.74	THE STATE OF THE S	

Total Hydraulic Conductivity (in/hr) =

1.00

Soil Type: Tanazza

Jon Type.	TUTIGEEG			
Soil Depth (in)	Soil Thickness (in)	Average Hydraulic Conductivity (Micro m/hr)	Average Hydraulic Conductivity (in/hr)	Weighted Average
0-2	2	9.17	1.30	0.04
2-15	13	2.82	0.40	0.09
15-45	30	2.82	0.40	0.20
45-60	15	70.57	10.00	2.50
Total Thickness =	60			

Total Hydraulic Conductivity (in/hr) =

2.83

Soil Type: Wodavar

Jon Type.	VV Oud vai			
Soil Depth (in)	Soil Thickness (in)	Average Hydraulic Conductivity (Micro m/hr)	Average Hydraulic Conductivity (in/hr)	Weighted Average
0-2	2	28.23	4.00	0.35
2-5	3	9.17	1.30	0.17
5-19	14	9.17	1.30	0.79
19-23	4	0.71	0.10	0.02
Total Thickness =	23			

Total Hydraulic Conductivity (in/hr) =

1.33

s5740 Soil Type	Soil %	Hydraulic conductivity (in/hr)	Weighted Hydraulic Conductivity		
Besherm	25	0.14	0.03		
Nopah	15	0.16	0.02		
Glencarb	10	0.52	0.05		
Haymont	10	1.30	0.13		
Rumpah	10	0.03	0.00		
Tencee	10	1.30	0.13		
Bluepoint	5	10.15	0.51		
Pahrump	5	1.00	0.05		
Tanazza	5	2.83	0.14		
Wodavar	5	1.33	0.07		

Hydraulic Conductivity (in/hr) = Hydraulic Conductivity (ft/hr) =

1.14 0.095

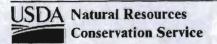
Storm Event	Ponding Depth (ft)	Infiltration Rate (ft/hr)	Evaporation Rate (ft/hrs)	Infiltration/ Evaporation Drain Time (hrs)
2-year	2.79	0.095	0.0007	29.15
5-year	3.8	0.095	0.0007	39.70
10-year	3.8	0.095	0.0007	39.70
25-year	3.8	0.095	0.0007	39.70
100-year	3.8	0.095	0.0007	39.70

Physical So. . roperties

United States

[Entries under "Erosion Factors--T" apply to the entire profile. Entries under "Wind Erodibility Group" and "Wind Erodibility Index" apply only to the surface layer. Absence of an entry indicates that data were not estimated]

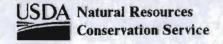
Map symbol and soil name Dep				10.11	Clay Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic	Eros	sion fact	ors	Wind erodi- bility group	Wind erodi- bility index
	Depth	epth Sand	Silt Cla	Clay					matter	Kw	Kf	Т		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
5740:														
Besherm	0-2			27-40	1.35-1.55	1.41-4.23	0.19-0.21	3.0-5.9	0.0-0.5	.32	.32	5	6	
	2-11			40-60	1.30-1.50	0.42-1.41	0.15-0.17	6.0-8.9		.28	.28			
	11-60			35-50	1.30-1.50	0.42-1.41	0.15-0.17	6.0-8.9		.28	.28			
Nopah	0-6			10-20	1.40-1.60	1.41-4.23	0.16-0.18	0.0-2.9	0.0-0.5	.49	.49	5	5	
	6-60			20-35	1.30-1.50	0.42-1.41	0.19-0.21	3.0-5.9	0.0-0.5	.28	.28			
Glencarb	0-8			10-20	1.35-1.50	4.23-14.11	0.19-0.21	0.0-2.9	0.5-1.0	.55	.55	5	4L	
	8-60	-		20-35	1.30-1.50	1.41-4.23	0.18-0.21	3.0-5.9	0.0-0.5	.49	.49			
Haymont	0-3			5-15	1.35-1.55	4 23-14.11	0.15-0.17	0.0-2.9	0.0-0.5	.43	.43	5	3	444
	3-40	***		5-18	1.35-1.55	4.23-14.11	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37			
	40-60	-		5-20	1.35-1.55	4.23-14.11	0.16-0.18	0.0-2.9	0.0-0.5	.32	.32			
Rumpah	0-3			40-60	1.30-1.50	0.42-1.41	0.14-0.16	6.0-8.9	0.0-0.5	.32	.32	5	4	
	3-54			45-60	1.25-1.45	0.00-0.42	0.14-0.17	6.0-8.9	0.0-0.5	.28	.28			
	54-74			40-60	1.25-1 45	0 00-0.42	0.14-0.17	6.0-8.9	0.0-0.5	28	28			
Tencee	0-2			10-20	1.45-1.55	4.23-14.11	0.15-0.18	0.0-2.9	0.0-0.5	.15	.28	1	5	
	2-7	***		10-20	1.45-1.55	4 23-14.11	0.05-0.08	0.0-2.9	0.0-0.5	10	.37			
	7-11	-	. 777	-		-	-	-	-	***	***			
Bluepoint	0-9	12		2-6	1.45-1 5	42.34-141.14	0.06-0.10	0.0-2.9	0.0-0.5	-17	.17	5	2	4
	9-24			2-6	1.50-1.65	42.34-141.14	0.05-0.08	0 0-2.9	-	10	.28			
	24-41	-		2-6	1.50-1.65	42.34-141.14	0.05-0.09	0.0-2.9		.17	.17			
	41-60	244		2-10	1.50-1.65	14.11-42.34	0.05-0.14	0.0-2.9		.24	.24			



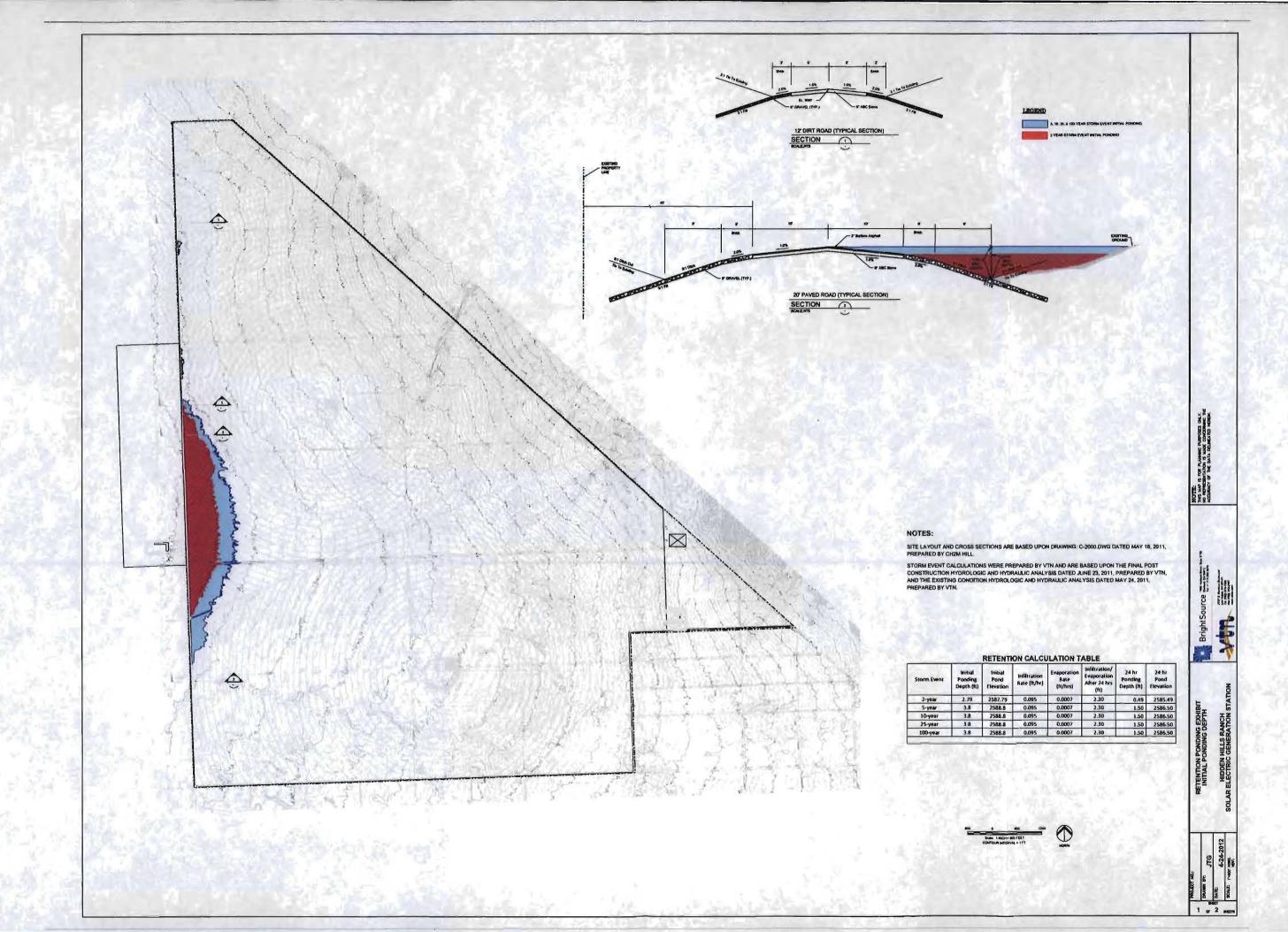
Physical Soil Properties

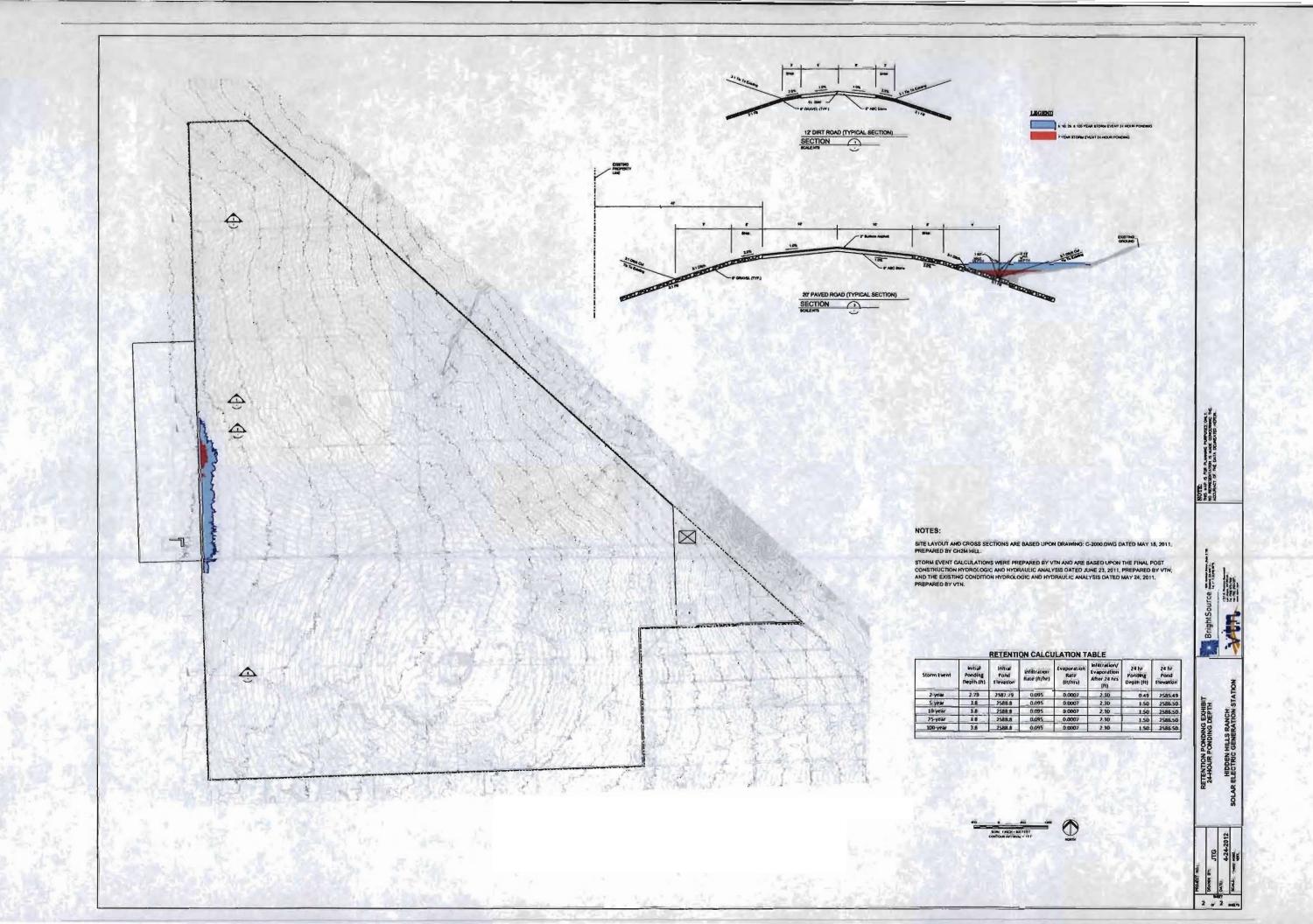
United States

Map symbol and soil name	4	1 7 6 7	and Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind	Wind
	Depth	Sand								Kw	Kf	τ	erodi- bility group	erodi- bility index
THE REAL PROPERTY.	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
55740:														
Pahrump	0-2			5-15		14.11-42.34	0.13-0.15	0.0-2.9	0.0-0.5	.32	.32	5	3	
	2-16			10-15		4.23-14.11	0.15-0.17	0.0-2.9		.37	.37			
	16-42			20-35		1.41-4.23	0.08-0.10	0.0-2.9		.15	.64			
	42-60			5-15		4.23-14.11	0.15-0.17	0.0-2.9		.32	.32			
Tanazza	0-2			5-15	1.35-1.55	4.23-14.11	0.13-0.15	0.0-2.9	0.0-0.5	.28	.32	3	3	
	2-15	~**		15-25	1.20-1.40	1.41-4.23	0.13-0.20	3.0-5.9		.49	.49			
	15-45			25-35	1.20-1.40	1.41-4.23	0.19-0.21	3.0-5.9		.43	.43			
	45-60				1.15-1.35	0.00-141.14								
Wodavar	0-2			5-10	1.30-1.50	14.11-42.34	0.13-0.15	0.0-2.9	0.0-0.5	.28	.32	1	3	
	2-5			5-18	1.25-1.45	4.23-14.11	0.19-0.20	0.0-2.9		.55	.55			
	5-19			5-18	1.15-1.35	4.23-14.11	0.13-0.20	0.0-2.9		.32	32			
	19-23					0.00-1.41								



	100-year	25-year	10-year	5-year	2-year
Peak Flow In (cfs)	10816	4464	2091	1025	44
Peak Flow Out (cfs)	10771	4372	2079	996	0
Peak Volume (acre-ft)	195.4	160.0	145.0	135.2	52.4
Peak Stage (ft)	2589.41	2589.13	2589.01	2588.90	2587.79
Peak Depth of Retained Water (ft)	3.8	3.8	3.8	3.8	2.79
Peak Time (HH:MM)	2100	2035	2045	2415	4705
Retention Amount (acre-ft)	125.4	125.4	125.4	125.4	52.4
Beginning of Overtopping (HH:MM)	1735	1650	1650	2010	N/A
End of Overtopping (HH:MM)	6105	5035	4510	4620	N/A
Overtopping Duration (HH:MM)	4330	3345	2820	2610	N/A
Depth of Overtopping (ft)	0.61	0.23	0.21	0.1	N/A







BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA 1516 NINTH STREET, SACRAMENTO, CA 95814 1-800-822-6228 – www.energy.ca.gov

APPLICATION FOR CERTIFICATION FOR THE HIDDEN HILLS SOLAR ELECTRIC GENERATING SYSTEM

DOCKET NO. 11-AFC-02

PROOF OF SERVICE (Revised 5/1/2012)

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DECLARATION OF SERVICE

I, <u>Mary Finn</u>, declare that on <u>May 11</u>, 2012, I served and filed copies of the attached <u>Hidden Hills Supplemental Data Response</u>, <u>Set 4</u>, dated <u>May 11</u>, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at: <u>www.energy.ca.gov/sitingcases/hiddenhills/index.html</u>.

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(Check all that Apply) For service to all other parties:

	Served electronically to all e-mail addresses on the Proof of Service list;
<u> </u>	Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-
	class postage thereon fully prepaid, to the name and address of the person served, for mailing that same
	day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses NOT marked "e-mail preferred."

AND

For filing with the Docket Unit at the Energy Commission:

- by sending an electronic copy to the e-mail address below (preferred method); OR
- x by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION - DOCKET UNIT

Attn: Docket No. 11-AFC-2 1516 Ninth Street, MS-4 Sacramento, CA 95814-5512 docket@energy.state.ca.us

OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

> California Energy Commission Michael J. Levy, Chief Counsel 1516 Ninth Street MS-14 Sacramento, CA 95814 mlevy@energy.state.ca.us

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Mary Finn, CH2M Hill